

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

TECHNICAL GUIDE
SECTION IV

STATEWIDE

Stream Channel Stabilization 584-1

Stream Channel Stabilization (ft)

Definition

Stabilizing the channel of a stream with suitable structures.

Scope

This standard applies to the structural work done to control aggradation or degradation in a stream channel. It does not include work done to prevent bank cutting or meander.

Conditions where practice applies

This practice applies to stream channels undergoing damaging aggradation or degradation that cannot be feasibly controlled by clearing or snagging, by the establishment of vegetative protection, or by the installation of upstream water control facilities.

Design criteria

It is recognized that channels may aggrade or degrade during a given storm or over short periods. A channel is considered stable if over long periods the channel bottom remains essentially at the same elevation.

In the design of a channel for stability, consideration shall be given to the following points:

1. The character of the materials comprising the channel bottom.
2. The quantity and character of the sediments entering the reach of channel under consideration. This shall be analyzed on the basis of both present conditions and projected changes caused by changes in land use or land treatment and upstream improvements or structural measures.
3. Streamflow peaks, velocities, and volumes at various flow frequencies.
4. The effects of changes in velocity of the stream produced by the structural measures.

Structures installed to stabilize stream channels shall be designed and installed to meet SCS standards for the particular structure and type of construction.

Plans and specifications

Plans and specifications for stream channel stabilization shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

Stream Channel Stabilization Specifications

Measures and installation methods that enhance fish and wildlife values shall be incorporated as needed and practical. Special attention shall be given to protecting and maintaining key shade, food, and den trees and to stabilizing disturbed areas.

Trees and brush shall be removed in a manner that prevents damage to other trees and property.

Trees, brush, and other materials shall be disposed of in a manner that insures the least detrimental effect on the environment.

Construction operations shall be carried out in such a manner that erosion and air and water pollution are minimized and held within legal limits.

The completed job shall present a workmanlike finish.

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NATIONAL
SUPPLEMENT
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Planning considerations for water quantity and quality

Quantity

1. Stage-discharge and flow velocity relative to the water budget components, geologic materials comprising the stream channel, and objectives of the channel modification.
2. Effects on water tables, soil moisture storage, and rooting depths and transpiration of vegetation.

Quality

1. Temporary and long-term effects on erosion and sedimentation.
2. Changes in stream water temperature that may result from the clearing of vegetation or alteration of water sources to the channel.
3. Effects on the visual quality of the water resource.